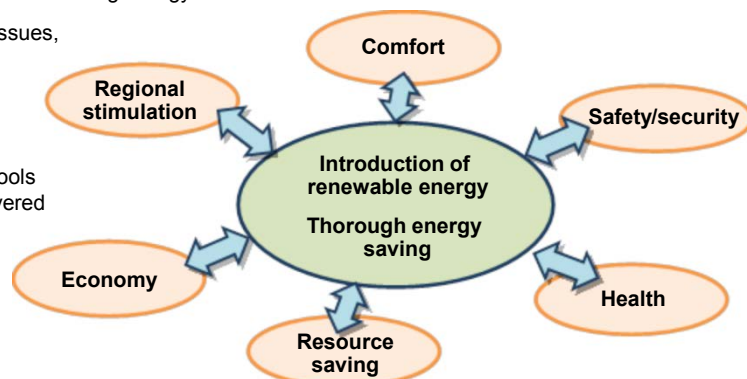


1. Keys to promoting initiatives

- We will convey in an easy-to-understand manner the various effects and benefits in security, safety, health, the economy and more that energy initiatives lead to, the progress of global warming and its impact and encourage citizens and businesses to take initiative in advancing energy initiatives.
- Through various places tackling energy issues, we will increase our number of allies, encourage them to connect and thus expand the circle of diverse initiatives in local communities and companies.
- Through environmental education at schools and other places as well as courses delivered to local communities, we will create opportunities to learn about environmental issues in school, locally and at home and participate in environmental activities and will enrich initiatives that value future generations.



2. Collaborative structure to promote initiatives

- Citizens, communities, businesses and the city government will share knowledge and ingenuity with each other, cooperate and work together.
- Related bureaus and ward offices will partner and disseminate information, etc. to communities.



3. Major measures to promote initiatives

Major measures for citizens

- We will raise awareness about energy-saving practices and their effects through the Global Warming Countermeasure Promotion Council in Yokohama.
- We will enhance the Yokohama Eco School (YES) program and share information with a wide range of people, from children to adults.
- Through environmental education at schools, we will deepen understanding of global warming issues and develop human resources capable of environmentally-friendly behavior.
- We will support energy-saving improvement work and the introduction of energy-saving equipment, etc.



Environmental education (delivered course)

Major measures for businesses

- In the Global Warming Countermeasure Council of Business Operators in Yokohama, we will promote the spread of energy-saving technology by working with businesses, for example facilitating workshops to disseminate information on the latest trends in energy-saving technology, concrete introduction strategies, etc.
- We will establish institutional frameworks and platforms to promote energy saving and generation by businesses.
- We will capture opportunities such as development in the city center and residential area restoration in the suburbs and incorporate the introduction of energy saving, energy management systems, etc. in cooperation with related businesses.



Energy saving course

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Yokohama City Energy Action Plan
— Summary Version —
Formulated March 2015

1. About the Energy Action Plan

After the Great East Japan Earthquake, citizen awareness, national measures and other factors surrounding energy underwent a major change. In addition, Yokohama's greenhouse gas emissions are on the rise due to an increase in thermal power generation. It is also seeing phenomena such as a rising average temperature and frequent heavy rain that seem to be due to global warming, so developing the city to be low-carbon and resilient to disaster is an urgent issue.

In order to more steadily promote the energy measures of the Yokohama City Action Plan for Global Warming Countermeasures (hereafter the "Action Plan") revised in March 2014, the Energy Action Plan was formulated with the aims of showing the planned steps to achieve the short-term (2020) targets in the Action Plan and producing concrete action not only on the part of the city government but also by citizens and businesses.

Significance of Formulation

- Through the introduction of standalone, distributed power sources utilizing renewable energy and effective utilization of heat, we will make the city safe, secure and environmentally friendly by creating a low-carbon society, stabilizing regional power supply, reducing impact during disasters, etc.
- By sharing the action plan with citizens and businesses, as a FutureCity, we will promote energy measures, introduce new technology and establish environmentally-conscious lifestyles.

◆ Positioning ◆

1. Relation to Action Plan

As an action plan to steadily promote the energy measures of the Action Plan, it shows the concrete actions of citizens, businesses and the city.

2. Relation to Yokohama City Mid-Term 4-Year Plan 2014-2017

It is positioned as a concrete plan for implementing Strategy 2: Yokohama's economic development and realization of an energy-circular city.*

*A city that increases the amount of energy generated within the city limits and uses it efficiently

2. Energy in Yokohama

- Final energy consumption characteristics:
Use at home accounts for 38%, which is higher than the national figure of 22%.
- Energy generated at city facilities:
About 40% of the electricity used by city facilities is generated there.

3. Basic Matters

In order to make the city "energy-circular," we will promote concrete measures from the following three perspectives.

- ✓ Further deployment of energy management
- ✓ Promotion of energy generation utilizing renewable energy and unutilized energy
- ✓ Enhancement of energy saving

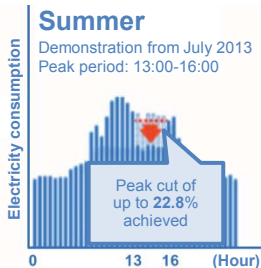
1. Deployment of energy management

Target State

- ◆ HEMS, BEMS, etc. is used based on technologies and results obtained from demonstration experiments such as demand response in the Yokohama Smart City Project (YSCP), power peak cuts/leveling is achieved and energy is used effectively
- ◆ A framework to adjust supply and demand of electricity and heat necessary for the region is constructed and efficient energy usage is achieved

Main indicators

Number of HEMS introduced: 165,000 households; Number of BEMS introduced: 60,000 (FY2020)



YSCP Building Category Demand Response Demonstration Results

Main initiatives

Further development of the Yokohama Smart City Project

- Establishment of Yokohama Smart Business Association
We will promote region-specific energy management through public-private partnership and optimize energy. Based on the HEMS/BEMS introduced in about 4,200 households and 34 business centers in the city, we will deploy the YSCP results both in Japan and overseas.
- Promotion of networked energy use by specific supply
We will promote energy collaboration between facilities, advance energy management, improve disaster resilience, reduce CO₂ and cut costs.

5. Initiatives combined with urban development

Target State

- ◆ Energy, including electricity and heat, is used efficiently and collaboratively based on introduction of renewable energies and energy management systems during urban development
- ◆ Standalone, distributed energy that is useful for securing power supply during disaster is widely introduced and a city that is strong against natural disasters, low-carbon and comfortable is being formed
- ◆ A low-carbon transportation system with various means of transport is being constructed

Main initiatives

Initiatives in development of the city center

- Promotion of Minato Mirai 2050 Project
 - We will introduce a standalone, distributed energy supply system that enhances environmental performance and disaster resilience.
 - We will promote the practical application of low-carbon, next-generation transportation to improve the convenience of movement in Minato Mirai.



Initiatives in development of the suburbs

- Suburban initiatives in Model Project for Sustainable Residential District etc.
We will promote networked energy use when reviving suburban residential areas and forming new urban areas.



3. Utilization of hydrogen

Target State

- ◆ Fuel cell vehicles and commercial fuel cell vehicles (buses, forklifts) spread as part of low-carbon, next-generation transportation and the necessary hydrogen stations and hydrogen production facilities are in place
- ◆ Stationary fuel cells are in operation in homes and offices, they are responsible for part of the power supply and power peak cuts/leveling are achieved
- ◆ Hydrogen produced from excess/byproduct hydrogen and renewable energy in the city is effectively used

Main indicators

Number of fuel cell vehicles in operation: 2000 (FY2020)
Number of hydrogen stations in place: 10 (FY2020)
Number of household fuel cells: 40,000 (FY2020)

Main initiatives

Promotion of spread of fuel cell vehicles

- Support for spread among citizens
- Initial introduction as official vehicles



Promotion and support of hydrogen station installation

- Installation promotion and support in cooperation with related businesses



Promotion of introduction of stationary fuel cells

- Support for introduction in homes, businesses, etc., taking into account business/life continuity planning (BLCP)
- Introduction at new City Hall



Source: Fuel Cell Association

2. Utilization of renewable energy/unutilized energy

Target State

- ◆ Renewable energy, a low-carbon energy source, is introduced in everyday life
- ◆ Unutilized energy is utilized efficiently in ways such as lending of waste heat from factories and effective utilization of sewage resources

Main indicators

Amount of renewable and other distributed energy introduced: Approx. 980,000 kW (FY2020)

Main initiatives

Expansion of system to report consideration of renewable energy introduction

Ordinances require that the introduction of renewable energy be considered when constructing buildings larger than a certain size. We will consider expanding this system and encourage the introduction of renewable energy.

Expansion of introduction of renewable energy at public facilities

- Consideration of strategies to use biogas from kitchen waste, etc.
- Research into multi-energy generation such as hydrogen utilizing sewage biogas
- Promotion of energy production through sewerage project



Sewage sludge digestion facility (Hokubu Sludge Treatment Center)



Solar panel (Kanagawa Water Treatment Plant)

4. Introduction of technology to support energy saving measures

Target State

- ◆ Energy saving in houses and buildings is progressing
- ◆ Energy saving devices and technologies have been widely introduced and energy saving initiatives including operational improvement is happening on a broad scale
- ◆ Initiatives to promote energy saving market expansion (such as introduction of new business models and training of related industries including small and medium-sized local companies) are being promoted

Main indicators

Houses complying with energy saving standards: 30%
Businesses complying with energy saving standards: 55% (Both FY2020)

Main initiatives

Eco-renovation promotion projects for housing

- Eco-Renovation Academy
We will promote energy saving in homes by creating a place for learning and practice to examine and implement renovation of existing houses.
- Promotion of eco-renovation (energy saving renovation)
In order to promote eco-renovation, we will support energy saving renovation such as insulation refurbishment, installation of more efficient equipment, etc.

Application of energy saving standards to (new) public buildings

We will work to further improve environmental performance by setting targets for newly-built public buildings based on environmentally-conscious standards.

